terminates before birth their structure is entirely removed, when their function is continued up to birth some traces, at any rate, of their structure are persistent through life. The Wolffian bodies and the omphalo-mesenteric duct, for instance, have entirely disappeared at birth; except in a few cases where the remains of the latter are preserved, in the form of a diverticulum, connected with the lower end of the ilium, the omphalo-mesenteric vessels being also, in such cases, sometimes represented by a thick cord passing from the diverticulum to the mesentery.

It is a fact of some practical importance that when a foetal structure is persistent it is endowed with the same growing properties as the rest of the body. This is true of those foetal structures which are *always* persistent; for instance, the remains of the umbilical arteries and veins not only increase in length, but acquire also considerable thickness, and form strong tough cords of fibrous tissue. It is true also of those structures which are *occasionally* persistent: thus a diverticulum often equals the intestine in size, and the remains of the omphalo-mesenteric vessels when they are persistent form a thick, strong, fibrous cord, which has been known to strangle large portions of bowel entangled in the loop between it and the mesentery. There is a specimen of this sort in the museum of the College of Surgeons, and there is another, probably of the same kind, in the pathological museum belonging to the University of Cambridge. The membrane uniting the labia, which in the little child is so thin and soft that it easily yields to the pressure of a probe, is in the adult so thick and strong as to withstand the expulsive force of the uterus, and to require a scalpel for its division. In this respect, as well as in some other particulars, these structures bear much resemblance to cicatrix.

Some three or four years ago, in dissecting a foetus of about six months, I found the costal and pulmonary pleuræ on both sides of the chest united by a soft substance, nearly resembling fine areolar tissue. I have observed the same thing occasionally in very young children; and it is no unusual circumstance in older persons to find one or both pleuræ, and even the pericardium, universally adherent, without our being able to discover that any symptoms of pleurisy or pericarditis had been observed during life. May it not be that in some of these cases the adhesions are dependent on an imperfect separation of the membranes in the early stages of foetal life, or the persistence of some perimordial substance which should have been removed, and its development into a tissue of low kind, similar to those we are in the habit of recognising as the product of inflammation. This is but a suggestion, the value of which must be tested by more extensive observation.

PRACTICAL

OBSERVATIONS ON DELIRIUM.

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DELIRIUM, whenever it arises, is always a matter of serious consideration to the medical practitioner, but especially so when it takes place in a disease, or during the progress of a case, in which its presence is unusual, and therefore unlooked for. In such circumstances it is often a subject of great embarrassment, and calls for the most serious reflection on the part of the professional attendant, and requires much experience and practical tact to ascertain its source, probable consequences, and what would be the best method to remove so serious a complication. It is scarcely necessary for me to enumerate the various ordinary sources of delirium, or to observe that the danger accruing from it can only be estimated by the peculiar circumstances of each individual case in which it may happen to occur.

To attain to a satisfactory prognosis, each case must therefore be carefully studied for itself; but it will be necessary to bring to our aid, a tolerably extended view of disease generally, and as great an amount of collateral medical knowledge as may be thought directly or indirectly to bear upon the case specially under treatment.

As in the treatment of all diseases, the subject of diagnosis is of primary importance; it is so in a peculiar sense in the complication here alluded to. It is to be presumed that the original disease upon which delirium has been engrafted, has been correctly understood; in that case it only remains to diagnose the complication, or in other words, to seek for the cause of the delirium; this is sometimes easily discovered, at others it is a matter of great difficulty. We shall be assisted in this inquiry by taking a brief review of delirium as it ordinarily occurs in the routine of medical practice.

The most dangerous cases of delirium, are those in which it is found connected with inflammation of the membranes, or substance of the brain, commonly spoken of as phrenitis; in this disease the delirium is of a violent character, and for the most part comes on suddenly, accompanied with much heat of the surface, flushed countenance, injection of the conjunctiva, with a frequent, strong, and full pulse, and very commonly a red and dry tongue, with a dislike to a strong light and loud sounds. The delirium of typhus fever is generally of a low muttering description, mostly supervening late in the disease, and the history of the case is, in general, sufficiently indicative of its nature. This form of delirium is frequently conjoined with subsultus tendinum, which in the late stages of typhus may be looked upon as a pathognomonic distinction.

As all forms of mental alienation may be said to possess in some degree a generic analogy. Maniacal insanity may sometimes be confounded with true de-

lirium; but the circumstance of the former being a chronic disease, taken together with the history of the case, will ordinarily be a sufficient distinction.

Excessive *pain* will sometimes, in individuals of peculiar nervous susceptibility, occasion delirium; and there is a form of delirium also, by no means of unfrequent occurrence, which may be called *hysterical*, the nature of which is for the most part pointed out by the associated symptoms, but nevertheless, from its frequent recurrence in the same individual it is occasionally found a troublesome form of disease.

Warm aperients combined with antispasmodics and tonics, and remedies calculated to regulate the uterine functions, will not fail eventually to clear up the diagnosis from any difficulty existing on that point, and as well to remove the disorder.

Delirium sometimes also follows hæmorrhages, and occurs in cases of inanition, consumption, ulceration of the bowels, and from worms; and towards the close of many chronic and exhausting diseases, and likewise from organic affection of the brain; in general, it will not be difficult to discriminate the nature of these cases, as leading symptoms will mostly be present to guide the mind of the practitioner to the disease, of which the delirium may be considered as symptomatic.

Delirium and insanity may sometimes be confounded; still in most cases the distinctive signs are sufficiently well marked. The insane patient generally retains all his senses as well as the powers of digestion and locomotion; his faculties are perverted, but not extinguished, and the error of mind in the insane is frequently limited to a single faculty. Delirium is generally associated with much well-marked bodily disease, whilst insanity is often attended with apparently unimpaired health; moreover, delirium is in the majority of instances, an acute, and insanity a chronic affection.

But perhaps the form of delirium which has obtained the name of *delirium tremens*, (the delirium of drunkards) is more calculated to throw light on the nature and causes of delirium generally, than many of those previously mentioned. Though the immediate use of fermented liquors is confessedly the most common cause of this disease, it is by no means the only one, as I think it will appear in the course of these remarks; at any rate the analogy between many cases of delirium, which are known not to have arisen from intemperance, to true *delirium tremens*, is so close, that practical men of great experience have found it difficult to make the distinction; still, it may be said that analogy does not constitute identity. If, however, it can be shown that a certain assemblage of symptoms, arising in a state of constitution, as respects physical force and vital power, exactly resembling that of another disease, is cured by the same means as that other disease, for all practical purposes the distinction is unimportant.

By systematic writers, *delirium tremens* has very properly been divided into two species,—the delirium which immediately follows a debauch or a fit of intoxication (*delirium ebriosum*), and the true *delirium tremens*, which does not commonly come on until an interval or period has elapsed of indefinite length, in which interval

the stimulus has been withdrawn. This latter form of *delirium tremens* has been said to have three stages; the first may resemble that which characterises the *delirium ebriosum*, the symptoms being of a congestive and somewhat of an inflammatory character, but more commonly it is marked by debility and much gastric irritation, slight febrile action, with coldness of the extremities. The second stage is ushered in by great nervous susceptibility, excitability of temper, ocular spectra, and delirious hallucinations; great restlessness, a constant desire to be moving about, a frequent, small, but compressible pulse, and a soft and moist skin, belong to the symptoms of this stage, as also an almost total deprivation of sleep. The characteristic tremors of the hands and tongue, which might have been slight, if not unobserved in the first stage, are now fully developed. If the case be progressing favourably, there will be a mitigation, in the third stage, of all the symptoms which characterise the second; on the contrary, if the reverse happen, and the malady advances, the powers of life sink, the coldness and dampness of the surface is augmented, the pulse becomes more frequent, and sometimes so weak and thready as hardly to be counted, the tremors increase and occasionally agitate the whole frame; the countenance will be pale and anxious, and the patient at the same time talking incessantly; the tongue will be for the most part furred and clammy, and the pupils in many cases somewhat unduly dilated. Great variety exists in different cases with regard to the stages and symptoms here referred to. Sometimes these attacks are so slight as to differ but little from nervous tremor, excepting that they are associated with mental delusions, great restlessness and talkativeness; in others it presents more severe forms and is complicated with vascular excitement generally, but more especially of the brain, accompanied with a pulse somewhat hard and feeble; the eye is injected; temperature of the head increased; convulsions also occasionally occur, and not unfrequently precede the delirium; but I have not noticed that they augur an unfavourable termination of the case, unless taking place in the last stage of the disease, and associated with a tendency to coma.

It is clearly deducible from this brief sketch of *delirium tremens*, that the two chief elements of the disease are,—firstly, great nervous susceptibility and excitability, accompanied in some rare instances with a tendency to undue vascular action of the membranes or substance of the brain; and, secondly, an exhausted and depressed condition of the brain and nervous system, which latter is its most characteristic feature.

Those medical men whose line of practice have led them to see much of the diseases of females, particularly those connected with the parturient state, can scarcely have failed to have remarked the great similarity between many cases of *delirium tremens*, puerperal mania, and probably some of the forms of delirium from other causes, which it is one of the objects of this communication specially to allude to.

The analogy between the symptoms of *delirium tremens* and those attendant on the early stages of

one of the forms of puerperal mania, is occasionally very striking; a considerable degree of insomnia is common to both; a frequent and weak pulse, the chattering delirium and the mental hallucinations are in many cases very similar. The pathological conditions of both diseases are alike; in neither is an inflammatory action of the brain or its membranes a common occurrence. A weakened and depressed state of the brain and nerves associated with great irritability of the nervous and muscular systems, are the characteristic features of both disorders; and it may here be added, that a sustaining regimen combined with the use of sedative medicines, constitutes the plan of treatment which has been found most successful in both diseases.

Although it has been just observed that inflammation of the brain or its membranes does not often take place in the two diseases here spoken of, its occasional occurrence is admitted and should never be lost sight of; and in reference to the consideration of these diseases and those which simulate them, the fact that, analogous symptoms are sometimes observed to take place in opposite conditions of the brain, with respect to vascular action, should always be borne in mind. To ascertain what is the precise state of the brain in any given case with respect to its circulation and nervous power, is the great desideratum in the diagnosis. It is the one great point or pivot on which the treatment must turn. The judgment must mainly be formed on the state of the skin, the pulse, and the eyes. If inflammatory action predominate, the pulse will be hard as well as frequent, the temperature will be high, more particularly about the head; the skin will be dry and the vessels of the conjunctiva congested; on the contrary, should nervous depression and irritability be the chief features, the pulse will be soft and compressible; the skin will not only be moist but frequently drenched with perspiration, and the tunica adnata will be of a pearly whiteness; but it will frequently happen, especially in the commencement of these diseases, that an undue degree of vascular action is found to prevail in connection with great weakness and irritability.

In forming the diagnosis, care must be taken not to give too much importance to a flushed state of the countenance, which may generally be viewed rather as an index of weakness and nervous irritability than as a sign of the existence of inflammation; for even in health, those individuals who are subject to blushing and much injection of the cutaneous vessels of the face, are those who possess weak constitutions and irritable and susceptible nervous systems. The presence or absence of a moist skin will be our best guide in all doubtful circumstances.

There has existed among medical men a strong disposition to ascribe violent mental disturbance to inflammation of the brain, but experience teaches us that this state of mind, as before observed, may be connected with very opposite conditions of the circulation. Gooch, in his admirable work on "*Diseases peculiar to Women*," says that, "it does not necessarily depend on inflammation or congestion, nor is depletion, however moderate, necessarily the proper remedy. Cerebral excitement is

often aggravated by depletion, and has been in some cases, as I shall have occasion to relate, brought on by it."

That peculiar state of the nervous system and physical powers favourable to the development of delirium, analogous in its characteristics to that which affects lying-in women and inebriates, I have long felt may be produced by various causes operating on the animal system, and I give the following cases as important illustrations of the truth of that opinion—an opinion indeed, well supported by Dr. Graves, of Dublin, in his very valuable and instructive work on "*Clinical Medicine*."

Case.—On August 19, 1830, I was requested to visit a gentleman, a Post-Captain in the Navy, who had just arrived at Parkstone, a village rather more than a mile from Poole, on a visit to his relations. I found him in the incipient stage of low fever, (mild typhus,) which did not yield to treatment till the beginning of October, when he became convalescent. He ascribed his complaint to the bad state of the drains connected with his residence at Southampton, and which had been undergoing repairs a short time before he left. My patient was tall and stout in his person, and of temperate habits, about thirty-five years of age. He had for the most part previously enjoyed good health, at the same time he had not the appearance of a very robust person. In the course of the treatment, it was once necessary to apply ten leeches to the temples, and a blister to the nape of the neck; besides this there was nothing in the remedies employed, calculated to lower, more than usual, the energies of the system.

Between the hours of nine and ten on the evening of the 7th of October I had a hasty summons to visit the patient, whom I had not seen for some days, conceiving it unnecessary. I found him on my arrival in a state of violent delirium, singing and praying alternately at the top of his voice, bathed in perspiration, and with a rapid but soft pulse. I learnt that he and his sister, in the afternoon, had been driven out in an open carriage, and that they had first gone down to the seashore, a distance of three miles, and afterwards to a neighbouring town, six miles distant, the entire distance passed over not being less than eighteen miles, and this was the first time of his having gone out of doors since his illness. Supposing that this attack had come on from fatigue, and the undue excitement consequent on so long and imprudent a drive, I directed an opiate, and ordered that he might be kept quiet, hoping in the morning to find him better. On visiting him early the next day I was told that he had been raving all the night, not having had any sleep whatever, and that great difficulty had been experienced in keeping him in bed. He was still bathed in perspiration, with a very rapid pulse; his tongue was moist, but slightly furred; the eyes were in constant motion, and his chattering, praying, and singing was incessant. The family were much alarmed at his situation, and a consultation was proposed with a physician, a friend of the patient, who happened to be on a visit to a family in the neighbour-

hood, and it was determined this gentleman should be sent for, who, on his arrival, pronounced the case to be one of phrenitis, and thought that no time should be lost in having recourse to the lancet and other depletory measures; this opinion was diametrically opposed to my own, feeling assured as I did that the disordered mind was the effect of excitement operating upon a brain and nervous system, whose powers had been greatly depressed, and natural irritability much augmented, from the effect of a serious and somewhat lengthened attack of fever. I represented to my professional coadjutor in the case, that the plan of treatment he proposed was, in my opinion, extremely hazardous. It was then determined to adopt an intermediate course; ten leeches were to be applied to the temples, a blister to the back of the neck, and a cold lotion to the head, and in addition half a grain of calomel, and the same quantity of compound antimonial powder, were to be given every four hours. The patient passed the whole of this day and the following night with the symptoms unmitigated.

On the morning of the 9th, the patient being no better, a physician from a neighbouring town was added to the consultation. I reiterated my views of the case, giving it as my opinion that the disease was not inflammatory, and that a sedative and sustaining mode of treatment was the one called for. This opinion being concurred in by the gentleman last consulted, it was agreed that the course thus proposed should be put in force; a draught was therefore ordered, containing twenty-four drops of laudanum, and the same quantity of compound sulphuric æther in camphor mixture, to be taken every three or four hours, until rest was procured. These draughts were regularly followed up until late in the evening, when sleep came to the patient's relief; he slept the whole of the night, awaking in the morning in a perfectly sound state of mind, and having no mental aberration afterwards. Sedatives, with mild tonics, and occasional aperients, were used as precautionary measures for a short time. The patient, though much weakened by this attack, in a very moderate period recovered his usual health, and is now living, (April 24th, 1850,) enjoying the rank of Rear-Admiral.

In the course of my experience I have met with many cases analogous to the preceding, but of which, with one exception, I have unfortunately preserved no notes. Of this case I here subjoin a short abstract. The subject of it was a lady of distinction in the vicinity of a neighbouring town. The case excited great interest, and made a powerful impression on my own mind. The symptoms were insomnia, violent delirium, the hallucinations resembling those observed in delirium tremens, with a frequent and irritable pulse. The patient had arrived at an advanced age, and had a peculiarly irritable and susceptible nervous system. The symptoms came on after an attack of influenza. Depletory measures were considered out of the question. A soothing and sedative mode of treatment was clearly indicated, and I shall not soon forget how promptly and satisfactorily the disease yielded to the plan of treatment adopted.

The following case, extracted from Dr. Graves's "Clinical Lectures," is full of interest, and replete with instruction; it not only illustrates the views I entertain of the pathology of this form of delirium, but shows, likewise, the treatment best adapted for its relief. The subject of it was a medical student, addicted to hard study and constant attendance in the dissecting room; his disorder followed a wound in one of his toes, occasioned by paring a corn. This gave rise to an imperfect abscess in the situation of the corn, and inflammation of the lymphatics of the limb, attended by fever. Dr. Graves observes:—"He became completely sleepless, and had incessant delirium; he was purged briskly, leeches extensively and repeatedly, his head shaved, and cold applications so constantly applied, that he appeared half drowned and collapsed. Notwithstanding this very active treatment, not the slightest relief was obtained, neither were the symptoms mitigated by incisions made in the inflamed patches for the purpose of evacuating matter; the sleeplessness continued, and the delirium was as wild as ever. I saw him on the 7th or 8th day, when all antiphlogistic measures had failed and his friends were quite in despair. On being asked my opinion, I stated that I looked upon the case as one of delirium not proceeding from any determination to the head or inflammation of the brain, but depending on a cause analogous to those which produce delirium traumaticum, and that instead of antiphlogistics, I would recommend a large dose of opium and some porter, to be immediately given. Mr. Cussac, who visited the patient after me, concurred in this view, and a full opiate was administered in repeated doses. It succeeded in producing sleep and tranquillising the nervous excitement. I may here observe, that a few days afterwards, this gentleman had a return of the symptoms of cerebral disturbance, with sleeplessness, in consequence of omitting his opiate, and that the opium and porter were again administered, and again succeeded in removing the delirium and watchfulness. By perseverance in the use of the same means, the disease was completely removed and convalescence established."

It was not till many years after the first of my own cases above referred to occurred, that Dr. Graves published his work on "Clinical Medicine," and it was with great pleasure that I found that distinguished physician concurring in the opinions that I had been led, by that and analogous cases, to adopt, and I cannot deny myself the satisfaction of quoting a few brief but aptly illustrative remarks on delirium, succeeding maculated typhus fever; and I do this though I may expose myself to the charge of prolixity, the observations and the two short cases accompanying them, appearing in my estimation, too important to be passed over on the present occasion.

Dr. Graves observes:—"It may be doubted whether any writer has illustrated with sufficient details, the fact, that delirium of a most violent and dangerous description sometimes suddenly supervenes in patients who, to all appearance, have passed favourably through the various stages of maculated fever.

"I published on a former occasion the case of a student in Trinity College, who was thus attacked on the eighteenth day, at a time when he seemed to have passed the crisis favourably, his pulse having fallen to 60, and all the other symptoms of fever having disappeared. Since that observation was made, I have seen so many cases of a similar description, that I think it right to impart whatever additional experience has taught me concerning the history and treatment of this singular species of delirium. It will appear evident from the nature of the means successfully employed in treating this affection, that it has little or no affinity to the delirium, which in the first stage of fever, so often accompanies true inflammation or congestion of the brain, but is rather allied to delirium tremens, delirium traumaticum, and acute puerperal madness.

"As in each of these cases, the delirium is preceded by the operation of some cause, which acts unfavourably on the nervous system, so in the delirium we are now about to consider, the pre-existence of fever may be assumed to act in a similar manner. Neither does maculated fever seem more inadequate to produce so serious an effect, than the act of parturition, the presence of a wound or fracture, or the long continued abuse of intoxicating liquors; for no severe typhus fever ever runs its course without bearing heavily on the nervous system.

"The facts I am about to relate, ought to make physicians extremely cautious about pronouncing fever patients out of danger, for even after a crisis occurring in due time and apparently the most satisfactory and complete, delirium may suddenly arise and may place the patient in the greatest peril, the physician perhaps having taken his leave in the full assurance that his visits were no longer necessary.

"*Case 1.*—Four years ago I attended with the late Mr. King, a gentleman in Grafton Street, who had fever, without any remarkable symptoms; he had maculæ it is true, but the patient was young and went through the disease favourably. On the sixteenth day his pulse had fallen to 60, and all danger seemed over. He had no thirst, his tongue was moist; eyes clear; and not the slightest headache or appearance of cerebral determination; in fact, when I visited him on the morning of the seventeenth day, every symptom betokened a speedy recovery. I must observe, however, that in this as well as in most cases of the kind I have witnessed, there was a certain degree of nervous excitement present, tending to produce want of sleep, and consequently, on leaving him at my evening visit, I directed the nurse to give him an opiate draught. This was unfortunately omitted, the young gentleman became gradually more restless and agitated, began to rave, and was found by Mr. King the next morning in a state of high delirium. His pulse was still rather slow, not more than 60; his skin was cold; his countenance collapsed, and he had been during the night wholly sleepless.

"We had great difficulty in managing this patient, and it was only by means of great attention, steeping his legs, and nutritious diet, wine and black drop,

exhibited freely and repeatedly, that his life was saved.

"*Case 2.*—The subject of this case was a medical student, who passed through the fever favourably, and appeared quite free from danger on the sixteenth day; on the seventeenth day I found him, at my morning visit, in a very promising condition, his pulse down to 60; his tongue moist; his skin of a natural temperature, and his eye clear, and nothing present but a certain amount of nervous excitement. To counteract this tendency the late Dr. M'Dowl and I found it necessary to give him every night an enema containing Tinct. Opii, gr. xxv. Unfortunately this was omitted for one or two nights about this period. The fever resolved itself, but resolved itself during the period of sleeplessness and a certain degree of nervous excitement. I saw him on the morning of the eighteenth day; I thought there was a good deal of anxiety and quickness of manner about him, with some slight increase in the muscular tremors. I therefore wrote to Dr. M'Dowl, and begged him to see that he took his opiate that night. Before this was done he grew much worse; in the evening he became highly excited, then quite delirious, and towards morning it was necessary to call in the assistance of three or four persons to keep him in bed. Dr. M'Dowl continued to attend him with great care and skill, and had sufficient influence over him to make him swallow the requisite medicine, which no one else could. Opiates were at first tried, but failed; we then commenced with the free exhibition of tartar emetic and extract of belladonna. In the course of twenty-four hours he took five or six grains of the latter; we afterwards omitted the tartar emetic, and substituted the black drop in its place. This succeeded, and after a violent attack of delirium, which lasted from thirty-eight to forty hours, he fell into a deep sleep, from which he awoke refreshed and rational; it was necessary, however, to repeat the narcotics for several nights, and they were not omitted till his convalescence became so confirmed, as to remove any apprehension of a relapse."

Dr. Graves goes on to remark:—"Here are two cases in which the disease declines, and the patient is regarded as nearly convalescent, when suddenly cerebral symptoms of a most alarming nature manifest themselves. The fever subsides, but with nervous excitement and insomnia, circumstances which have been long observed as characteristic of an imperfect crisis. The point, however, to which I wish to direct attention, is, that a person not thoroughly acquainted with the nature of this affection, might be led into a very important error; he might suppose this to be inflammatory excitement, to be treated by leeches, cold to the head, and other antiphlogistic measures.

"In the first case, indeed, the symptoms were so violent, that I advised leeching, but Dr. McDowl did not apply them, and perhaps it is well he did not. I do not mean to say that leeches and the antiphlogistic treatment are never indicated in the delirium which occurs in the advanced stage of maculated fever, or in that which follows the stage in which the pulse falls to

the natural standard, the thirst ceases, and the skin grows cold. Such an assertion would lead, in some instances, to an injudicious and even dangerous method of treatment, for cases do occur where, under these circumstances, topical and antiphlogistic measures are absolutely called for.

My object in making these remarks is to point out, not the rule but the exceptions—the numerous exceptions—to the method of treatment usually employed.

The foregoing observations and questions are grounded upon the analogy supposed to exist in delirium, arising from various causes, and in persons under very different circumstances of disease, and brought about by causes having little similarity to each other, but agreeing in one important particular—a debilitated and an exhausted state of the nervous system. The general principles of treatment are the same in all, but in carrying them out important modifications are frequently called for, varying with the particular requirements of the several cases.

It is scarcely necessary for me to observe, that opium in some form is the grand remedy in delirium tremens; and Dr. Gooch observes—"The most valuable medicines in the treatment of puerperal mania are narcotics."

The following important case from Dr. Gooch I shall here quote, as strikingly illustrative of the value of the remedy, when appropriately and timeously employed for that disease. :-

"*Case*.—I was sent for late one night to see a lady who had been delivered of her first child about a week before; she was constitutionally nervous, her milk had been deficient, and she had had slight fever, for which she had lived unusually low, but nothing had occurred to create the smallest anxiety about her till this evening, when her husband, who had left her as well as usual in the morning, came home and found her incoherent in mind. When I went into the chamber, and approached her bedside, I found her lying with her cheek on the pillow, her eye apparently fixed intently on some object; she paid no attention to the questions that were put to her, and could not be prevailed on to speak whilst I was in the room. She was in a profuse perspiration, which stood in large drops upon her face and forehead; her pulse was 140, small and weak; whilst I was feeling it her hand was affected with spasmodic twitches, and she picked at the bedclothes as if endeavouring to take up something which she saw there. What was the cause or nature of these symptoms? It was impossible to look at them without alarm. Was it the last scene of some eventful disease which had been stealing on unsuspectedly; or was it a sudden attack of puerperal mania? Although the mind was incoherent, it did not exactly resemble the ordinary form of that disease; it was more like delirium tremens. After talking on the subject with two medical men who were there, it was at length agreed that all active treatment for the removal of supposed inflammation of the brain should be postponed, at least for a few hours, and that we should try the effect of opium. Thirty drops

of the sedative solution of opium were divided between two draughts, one to be taken directly, and the other two hours afterwards, if she were not asleep. I went the next morning, at nine o'clock, and found the two medical men who were there the night before; they met me with cheerful countenances, and the agreeable sentence—'she is quite well.' I then learnt the events of the night. The second draught had put her into a sound sleep, and she awoke in the morning with a clear mind, and a pulse of 80. I went up into the chamber with one of the medical gentlemen. As soon as she saw us she began to talk incoherently, and her pulse rose nearly to 100. Suspecting that our presence was doing harm, we retreated into the drawing-room. When her husband came down, he told us that all this agitation had been produced by her perceiving a striking likeness between myself and her dead father, and between my medical companion, who was a florid, healthy-looking man, to a dead friend of hers; the agitation, however, subsided as soon as we left the chamber. She had no return of it, and recovered from her confinement without another untoward circumstance. Depletion would easily have converted this into a dangerous and perhaps a fatal case."

But these cases are not always to be so simply treated, many requiring, at the same time that sedatives are used, particular attention to be paid to the condition of the abdominal organs. If the bowels are loaded they must be cleared out, and morbid secretions corrected. Attention to these matters has, in some cases in which bilious derangement has been a prominent feature, been of itself sufficient to cure the disease. In all these forms of delirium it is an object of primary importance to sustain the energies of the system by a nutritious diet, accompanied by a moderate allowance of stimuli, or not, as the exigencies of the case may require. It may be inferred from the observations made in the course of this paper, that local depletion is rarely called for, and general depletion seldom, or never, in the forms of delirium here particularly referred to.

The *post-mortem* appearances in fatal cases are quite in harmony with these views. In a fatal case of puerperal mania, Dr. Gooch states:—"The veins throughout the body were remarkably empty; the heart contained little blood; the lungs and liver were singularly pale; within the head there was the same deficiency of blood in the veins of the pia mater and in the sinuses; under the arachnoid membrane was a little serum; on slicing of the hemispheres the bloody points were unusually numerous."

Dr. Graves gives the following account of a patient who died of the same disease:—"The most careful examination could discover in the brain no phenomena in the remotest degree capable of explaining the occurrence of delirium or death. There was no thickening of the membranes, no subarachnoid effusion, no unusual vascularity of the superficial or central parts, no abnormal quantity of fluid in the ventricles, no softening, hardening, or degeneration of structure, everything was unaltered and healthy. We also examined the uterus; it was of the size that organ ordinarily is at the same

period after parturition, that is to say, about half as large as the fist, and of perfectly healthy appearance; its structure was also natural, and it exhibited nothing worthy of remark in its interior. The rest of the abdominal viscera were healthy. The chest was not examined."

Dr. Copeland, in his dictionary, corroborates these statements. He observed:—"There are no signs after death, of inflammation, or even of congestion, excepting in such cases as have approached in their characters to phrenitis on the one hand, or to nervous fever on the other. In these, appearances of an inflammatory or of a congestive nature, with or without effusions of serum, are often observed. The *pure* cases of the malady present little besides anæmia of the brain and its membranes, and of the system generally."

I would conclude this communication with a reference to delirium, frequently attendant on the latter stages of obstructive heart disease. As this form occurs in patients of all ages and temperaments, and in such individuals, the correctness of whose habits cannot be impeached, I refer to it as an incontrovertible proof of the accuracy of the view I have endeavoured to set forth in the early parts of this communication, that inebriety is not the only cause of delirium tremens.

The form of delirium here alluded to more closely resembles delirium tremens, as respects visual delusions, than any other with which I am acquainted, and also as regards the diseased hallucinations; and clearly arises from the same predisposing cause or causes as that disease, namely, a weakened and irritable state of the brain and nervous system, induced by want of sleep and exhausted powers.

Sleeplessness in these cases is the result of a very different cause from the other instances before mentioned. In these the patient is indeed overpowered with sleep, but is unable to take any, from the state of his breathing, which is of a very peculiar character. Besides the distressing paroxysms of orthopnoea with which these patients are much troubled, as the termination of the disease approaches, the breathing consists of minor paroxysms of difficult respiration, alternating with a state of quiescence of equal length, and so marked that the function appears for a time as if entirely suspended. The former consists of quick and deep respiratory movements. I have observed that it commonly lasts about thirty seconds, in which there are generally the same number of complete respirations. During the period of rest the patient has just time to fall asleep, when he is again awoken by the imperative necessity to breathe, by which action the capillary circulation through the lungs is restored, and the congestive condition of the pulmonary vessels and right cavities of the heart is temporarily removed. In these distressing circumstances the patient is at length nearly deprived of sleep altogether, and the resulting effects on the nervous system differ but little from the extreme of watchfulness from other causes. Similar ocular spectra and visual delusions arise, as characterize true delirium tremens, but the patient occasionally retains a sufficiency of mental powers to correct them. A re-

markable instance of this occurred many years ago in my practice, in the case of an elderly gentleman who died from valvular disease of the heart and hypertrophy of the left ventricle. He was greatly troubled with the deceptive appearances here spoken of. He was continually fancying that there were persons in his bedroom, particularly soldiers, with whom he would converse; he also thought he saw flies and other insects running over the bed-clothes. One day, on visiting him, he told me that he had been much annoyed by a great number of beetles that he saw amongst the cinders under the grate; but presently observing them to pass over the red hot coals in the fire he became convinced that it was a visual deception, and for a short time was no longer troubled by it. For a patient in this condition there is little or no hope, as the primary disease scarcely admits of a remedy; though I have in a few instances seen the unfortunate sufferer for a short time partially relieved by the exhibition of diuretics, conjoined with small doses of blue pill, so as slightly to affect the gums, as recommended in my paper in the sixth volume of the "Provincial Transactions." But opium in any form, so useful in ordinary delirium tremens, is quite inadmissible in this. The safety of the patient in obstructive heart disease essentially depends upon promoting the secretions and keeping the depurating organs in full activity.

Since the above was written I have read the first part of the first of the Lumleian Lectures for the present year, 1850, by Dr. Todd, of King's College Hospital, delivered at the Royal College of Physicians. In these lectures I find allusion to three forms of delirium which I have not referred to. That they have been the subjects of observation by this distinguished physician is of itself sufficient to commend them to our notice. The discriminating characters of this disease, indicated by Dr. Todd, will, I doubt not, be considered highly important, and of much practical value. The three specimens here alluded to are severally designated, "epileptic delirium," "renal epileptic delirium," and "delirium of chorea." Of the last two kinds I have no experience, though with regard to the former of these two it might, *a priori*, be inferred from the common and known fact of the retention of urea in the blood, producing coma, that it would also, on some occasions, give rise to a disturbance of the intellect. In reference to the discrimination of this form of delirium, it is with great propriety recommended by Dr. Todd, "that in every instance of delirium, especially of the epileptic kind, the practitioner should enquire early into the state of the kidneys, by careful examination of the urine."

I have, in the course of my practice, met with several cases of the true epileptic delirium, and I entirely concur in Dr. Todd's account of it, who observes:—"The delirium in cases of this description is in general of the most decided kind, and it often amounts to mania. The patient is wakeful, noisy, sometimes mischievous; sometimes muttering, incoherent, and unintelligible; sometimes distinct and easily understood, the subject of his ravings being determined by circum-

stances or events which had previously more or less occupied his mind."

About seventeen years since I was called to give my assistance to a young man, aged 21, who had been attacked with this complaint. His occupation was that of a carpenter. He had previously enjoyed good health. The first attack took place in the night, after he had gone to bed; he made his escape from the house, and was not found for many hours. When brought home he was in a state of delirium, which continued for a day or two. Shortly after this he was attacked with decided epilepsy. Until about three years since, I have been occasionally called to visit him professionally, in consequence of a continuance of the disease. From the commencement of his complaint to the above period, he was attacked with epilepsy at intervals of two, three, or four weeks; the fits were sometimes preceded by delirium, and almost always followed by it; at length, in these delirious attacks, he not only became extremely troublesome, but at times showed a decided disposition to injure those about him; and, moreover, the powers of his mind had become in the intervals a good deal impaired.

These circumstances led to his being placed in an asylum, where he now is, but not in a worse condition than when he was removed there. In my attendance upon him, it is worthy of remark, that nothing was found of so much use as opium, which, from procuring him rest, was always followed by relief.

The other case of epileptic delirium with which I shall close my paper was furnished me by a medical friend. I give it in his own words:—

"F. D., aged 20; had been subject to epilepsy for eight years, the fits in no respect differing from the ordinary type. At first they were at considerable intervals apart, one in two or three months, but for the last three or four years he has had them as frequently as twice or three times a week; with this increase in the severity of the paroxysmal part of his malady fatuity has gradually come on. About three years ago he was seized with sudden delirium, accompanied with an exacerbation of his epilepsy. The delirium lasted on and off for more than a month, alternating with a highly nervous and excited state of mind; the patient would insist on being marched up and down a yard attached to the house, by his mother. He could neither be persuaded to go in doors, to sit still, nor to allow his mother out of his sight; at length his delirium ceased, his excitement subsided, and he continued having his fits as usual. A year after this another similar attack came on, of greater violence than the first, and requiring the employment of the most powerful restraint. From this too, but after a longer interval than before, he recovered.

Now appeared a new set of symptoms—frequent delirium at night. The patient would go to bed apparently well; in the course of the night he would get up and wander about the house in his night shirt, frequently hurting himself, falling up and down stairs, and would either be taken back to bed by some of the members of his family, whom in his wanderings he had

disturbed, or would get back to bed himself, and find in the morning what had happened from the bruises he had sustained, or the vague recollections he had of his night having been frightful and distressful to him. Frequently in these delirious wanderings he would have a fit, often on the stair-case; sometimes a fit would usher in the delirium; sometimes he would have returned to bed before the fit came on, and again sometimes he would have no fit at all, and the delirium would seem to supplant it. That the delirium on these occasions *really* took the place of the epilepsy is rendered abundantly evident from the fact that the premonitory symptoms on the previous day, lethargy and stupor, were as clearly marked when he had only delirium as when he had the epileptic convulsions in addition. These delirious night wanderings became at length so frequent, that for many months his mother was obliged to sleep in the same room with him.

In this state he went into a hospital, and was treated with chloroform; he was put to sleep lightly in the morning about ten, and profoundly at night about nine, and he generally passed the night in one sound nap, not waking up till six or seven in the morning. The result of this treatment was, that during the ten days he stayed in the hospital his delirium entirely disappeared, and he only had one fit, and that a mild one. Unfortunately, in about a week he contracted some hallucination with respect to the nurses, and insisted on leaving. He then went on in his old way, his symptoms getting rather worse than better, till, one Sunday evening at church he suddenly stood up and addressed the clergyman who was preaching in most violent language, calling him all sorts of names, and evidently labouring under the delusion that the subject of the discourse was an attack against his father. From this time he became violently mad, raved night and day, attempted his own life and that of his sister, and required many people to hold him in bed. I furnished his family with the necessary certificates for his admission into an asylum, and I regret to say that my acquaintance with the case terminates here.

The points most indicative in this case, and for which it is most particularly valuable, are these:—it shows the intimate relation between the epileptic and delirious conditions;—that as the one got worse, the other got worse;—that they were generally associated;—that the delirium ushered in the epilepsy, or the epilepsy the delirium, or that the one took the place of the other;—and, lastly, that the only remedy that did him any good was chloroform, a medicine which, though it cannot be called strictly an opiate, is yet functionally an anodyne, and which gave him what opium would have given him, sound sleep every night."

In the observations contained in this paper, on the various forms of delirium, it was not my object to give a complete account of any one of them, but rather to indicate the principles by which they might be viewed, and to suggest modes of treatment the most conducive to their relief.